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10/691,522	10/24/2003	Peter Phelps	9-13528-206US	7434

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OGILVY RENAULT LLP		SU, BENJAMIN
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/691,522	PHELPS ET AL.
	Examiner	**Art Unit**	
	Benjamin Su	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 October 2003</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-20</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>24 October 2003</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

NOTE

1.   In claim 1, line 6, the term "adopted to " is not a positively recited claim limitation. Therefore, the limitations after the term are not considered as claim limitations. It is suggested the applicant remove the term. Same problem exists in claim 3, line 2; claim 5, line 2; claim 6, line 2; See MPEP 2111.04.

Specification

2.   The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Drawings

3.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: In Figure 1, the reference NE2 is not in the drawing. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next

Office action. The objection to the drawings will not be held in abeyance.

4.   In addition to Replacement Sheets containing the corrected drawing figure(s),

applicant is required to submit a marked-up copy of each Replacement Sheet including

annotations indicating the changes made to the previous version. The marked-up copy

must be clearly labeled as "Annotated Sheets" and must be presented in the

amendment or remarks section that explains the change(s) to the drawings. See 37

CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy

will result in the abandonment of the application.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public
use or on sale in this country, more than one year prior to the date of application for patent in the United
States.

6.   Claims 1 – 9, 16, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by

Ikeda et al.(US 6144633)

Ikeda et al. disclose, regarding claim 1, a network element (NE) of a data

transport network across which a tunnel is provisioned, the NE comprising:

a signal processor (see column 13, line 67) for maintaining a local occupancy

status of a tunnel segment of the tunnel adjacent the NE (see column 14, lines 33 – 36,

wherein whether or not a switching has been completed for protecting a failure

corresponds to a local occupancy status of a tunnel segment), the signal processor

adapted to use the local occupancy status (see column 15, lines 58 – 60) and content of

protection switch messages received from adjacent NEs of the tunnel (see column 15,

50 – 55) to control use of data transport capacity over a link that locally supports the

tunnel segment (see column 15, lines 61- 67, wherein the determination of switching

corresponds to control use of data transport capacity over a link that locally supports the

tunnel segment), and communicates the use of the data transport capacity to adjacent

NEs of the tunnel, in protection switch messages (see column 16, lines 16 – 17) ;

and a messaging system for exchanging the protection switch messages with

adjacent NEs of the tunnel enabling distributed processing of the protection switch

messages across the tunnel (see column 12, line 1, wherein APS bytes

transmitter/receiver corresponds to a messaging system);.

regarding claim 2, the tunnel is a bidirectional tunnel, and the messaging system

is a full-duplex messaging system that transmits the protection switch messages on two

bidirectional links, if the NE is a tandem of the tunnel (see column 18, lines 34 – 49,

Figure 11, Box 201, Box 206, Box 205), and on one bidirectional link if the NE is an end

point of the tunnel (see Figure 11, Box 200, Box 205, wherein Box 200 is the end node

for working line 2);

regarding claim 3, the signal processor is further adapted to monitor each

bidirectional link, and to relay a tunnel condition protection switch message in an

opposite direction of a detected link condition, if a link condition is detected at the NE,

and the NE is a tandem (see column 21, lines 17 – 20);

regarding claim 4, the messaging system comprises, for each of the bidirectional links, paired frame reception hardware and frame transmission hardware for processing consecutive frames of data transported over the bidirectional link (see column 12, lines 9 – 10), and the messaging system is provided by an automatic protection switch (APS) overhead of the frames that is presented to the signal processor with expedited interrupt-based handling (see column 11, lines 51 – 54);   .

regarding claim 5, the signal processor is adapted to control the use of the data transport capacity by inserting pended (see column 16, lines 60 – 65,column 17, lines 23 - 25, wherein bridge reject corresponds to pended indicator) and preempted (see column 17, lines 12 – 16, wherein bridge response corresponds to preempted indicator) indicators in the APS messages, which originate at end points of the tunnel (see column 19, lines 17 – 20);

regarding claim 6, the signal processor is adapted to pend a received switch request if a current occupancy of one of the tunnel segments over which the switch request is transmitted is of higher priority than a request priority contained in the switch request (see column 18, lines 55 – 58, column 19, lines 15 – 17, lines 33 – 35);

regarding claim 7, if the tunnel passing through the NE is transporting live traffic, and a request of a higher priority is received from another tunnel for the data transport capacity of one of the tunnel segments of the tunnel, the NE initiates a preemption of the tunnel by inserting the preempted indicator into the APS messages in both directions (see column 21, lines 21 – 24);

regarding claim 8, a method for processing automatic protection switch (APS) messages at a network element (NE) in a tunnel provisioned across a data transport network, the method comprising:

determining whether the NE is an end point of the tunnel, or a tandem of the tunnel, when a new APS message is received at the NE (see Figure 5, Box S3, wherein determining if the node is the destination corresponds to determining if the node is an end point of the tunnel, it also implies if the node is not the end node, it is a tandem node);

if the NE is a tandem, applying a message handling procedure for the new APS message using local information about tunnel segments of the tunnel only maintained by the NE, to update the local information (see column 16, lines 60 – 67, wherein the priority of the request paths corresponds to local information about tunnel segments, the determining to switch data to protection lines if the priority of the failure is the highest corresponds update the local information) ;and selectively forward the to adjacent NEs of the tunnel (see column 17, lines 4 –8);

if the NE is an end point, updating a status of the tunnel (see column 7, lines 7 – 9, column 12, lines 16 – 19, Figure 24, Box A, Box 9b, wherein Box A is an end node, after receiving message 9b, the processor in Box A will update the network table);

regarding claim 9, receiving a notice of a link condition on a link of the NE supporting one of the tunnel segments, and, if the NE is a tandem of the tunnel, originating a tunnel condition message used to indicate the link condition to the tunnel end point, so that a protection switch may be initiated (see column 21, lines 1- 5, Figure

13, Box 308, Figure 14 Box D, Box 8a, wherein Box D corresponds to a tandem of the tunnel 308, Box 8a corresponds to a tunnel condition message);

receiving a tunnel status message from an adjacent NE in the tunnel from a K-byte overhead of a frame that serves as a data transport unit of the network (see column (see Figure 14, Box 8a, Box D, column 20, lines 59 – 65);

and receiving a message from a network management that prompts a protection switch, if the NE is an end point of the tunnel (see column 12, lines 9 – 15, wherein processor 1 corresponds to a network management, column 21, lines 21 – 25, wherein Node C corresponds to an end point of the tunnel);

regarding claim 16, a method for processing a protection switch request at a network element (NE) in a tunnel provisioned across a data transport network, the method comprising:

receiving the protection switch request, and determining whether the NE is an end point of the tunnel, or a tandem of the tunnel (see column 15, lines 43 – 46, see Figure 5, Box S3, wherein determining if the node is the destination corresponds to determining if the node is an end point of the tunnel, it also implies if the node is not the end node, it is a tandem node) ; and if the NE is a tandem, using an occupancy status of a tunnel segment of the tunnel only maintained by the NE, and a priority of the protection switch request to determine whether the protection switch is locally allowable (see column 12, lines 63 – 67, column 13, lines 1 – 7); forwarding the protection switch request over the tunnel segment if the protection switch is locally allowable (see column 17, lines 4 – 8);

and forwarding a pended protection switch request over the tunnel segment if the protection switch is locally not allowable (see column 19, lines 33 – 35, wherein bridge reject corresponds to a pended protection switch request);

regarding claim 17, maintaining the occupancy status by storing information related to whether data transport capacity that supports tunnel segments of the tunnel is idle (see column 12, lines 16 – 20, Figure 14, Box 1), or a tunnel segment of an occupant tunnel is switch connected to another tunnel segment , and uses the data transport capacity (see column 20, lines 37 – 41, when it is determined there is an occupant in the tunnel, it implies the occupant will use the data transport capacity); an occupant priority of the occupant tunnel (see column 16, lines 60 – 62, the comparison between the received request priority and the priority of the request paths implies the priority of the request paths are stored, so a comparison can be made); a link condition of a link providing the data transport capacity (see Figure 32, Box PRIORITY, wherein SIGNAL DEGRADATION, SIGNAL FAILURE correspond to a link condition); and whether the NE is preempting the occupant tunnel (see column 21, lines 35 – 39, wherein other nodes know the switching status between node C and E implies the NE is preempting the occupant tunnel because only the highest priority request is switched, therefore the lower priority requests are preempted).

Claim Rejections - 35 USC § 103

7.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

8.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 10 – 14,18,19 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Ikeda et al.

Ikeda et al. disclose, regarding claim 10, all the subject matter of the claimed invention as recited in paragraph 6 of this office action and if the link condition is a signal degrade on a working tunnel, the originating the tunnel condition further comprises:

forwarding a tunnel condition message in the K-byte overhead to both adjacent NEs in the tunnel (see column 21, lines 17 – 20);

waiting for a reply to the tunnel condition messages from the end points of the tunnel via the adjacent NEs (see column 21, lines 24 – 27, wherein the request signal 9a corresponds to a reply and node E completes the switching after receiving the reply implies node E was waiting for a reply from Node C, which is the end of the tunnel).

Ikeda et al. fail to teach receiving without forwarding the tunnel condition replies until the signal degrade link condition ends.

However, it is obvious to not forward the reply messages beyond the point of fault.

Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use receiving without forwarding the tunnel condition replies until the signal degrade link condition ends in the method of Ikeda et al. in order to allow efficient system resources use by not wasting system resources to forward message unnecessarily.

Regarding claim 11, Ikeda et al. disclose, receiving a tunnel status message from an adjacent NE comprises receiving a protection switch request used to erect a protection tunnel (see column 21, lines 17 – 20, Figure 14, Box D, Box C, Box 8a);

Regarding claim 12, Ikeda et al. disclose, applying the message handling procedure upon receipt of a protection switch request message, comprises: identifying an occupant priority of data transport capacity supporting the tunnel segments of the tunnel; comparing the occupant priority with a priority contained in the protection switch request to determine whether the protection switch is locally allowable (see column 12, lines 63 – 67, column 13, lines 1 – 11);

forwarding the protection switch request over the tunnel segment if the protection switch is locally allowable (see column 21, lines 21 – 24); and

forwarding a pended protection switch request over the tunnel segment if the protection switch is locally not allowable (see column 19, lines 33 – 35);

regarding claim 13, deeming the protection switch request allowed if the data transport capacity is unoccupied, and the occupant priority is consequently null (see column 21, lines 21 – 24, Figure 14, Box 3, wherein the link segment of node C is idle until receiving the bridge switch request, and allows the bridge switch request, it implies protection switch request is allowed if the link is unoccupied, wherein the SF priority is 1 and switch is allowed because the existing priority is lower implies the occupant priority is null when idle);

deeming the protection switch request allowable if the occupant priority is less than the protection switch request priority (see column 12, lines 63 – 67, column 13, lines 1 – 7) ;

and deeming the protection switch request not allowable if the occupant priority is greater than the protection switch request priority (see column 13, lines 7 – 12);

claim 18 is rejected the same reason as above.

regarding claim 14, wherein the tunnel is a bidirectional tunnel (see column 18, lines 34 – 49), and the receiving the protection switch request comprises receiving the protection switch request from an adjacent NE in a first direction of the tunnel (see column 21, lines 17 – 20, wherein the direction from node E to node C is a first direction), removing any occupant (see column 25, lines 35 – 39), and building the cross-connect if the protection switch request is allowable (see column 21, lines 21 – 30, the completion of the switch implies a cross connect has been built), and an unpended switch request is received from the tunnel, in a direction opposite the first direction (see column 21, lines 22 – 23, wherein the request signal 9a corresponds to an unpended switch request, wherein the direction from node C to node E corresponds to a direction opposite the first direction);

claim 19 is rejected the same reason as above.

11.   Claim 15, 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al.

Ikeda et al. disclose regarding claim 15 all the subject matter of the claimed invention as recited in paragraph 10 of this office action and building the cross-connect as soon as the request is deemed allowed (see column 21, lines 21 – 26).

Ikeda et al. fail to teach if the switch request received from the opposite direction is pended, taking down the cross-connect.

However, it is obvious to take down the cross-connect if a switch were not to be performed.

Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use if the switch request received from the opposite direction is pended, taking down the cross-connect in the method taught by Ikeda et al. in order to allow efficient system resources use.

Claim 20 is rejected the same reason as above.

Conclusion

12.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Alagar et al. (US 7046619) and Liu (US 5914798) are cited to show methods which are considered pertinent to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin Su whose telephone number is 571-270-1423. The examiner can normally be reached on Monday - Friday 10 - 3 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Q. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BZS

RICKY Q. NGO
SUPERVISORY PATENT EXAMINER